

Is foreign-accented speech easier to understand
if it is produced in one's own voice?

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Second language (L2) learners often face the challenge of having to perceive and produce non-native sounds and sound contrasts. This is usually reflected in slower and less accurate word recognition in the L2 (Broersma, 2012, *LANG COGNITIVE PROC*, 27(7-8), 1205-1224) and accented pronunciation (Herd, Jongman & Sereno, 2013, *JASA*, 133(6), 4247-4255). However, it has been shown that speakers of the same first language (L1) may not have trouble understanding their own accent (Bradlow & Bent, 2003, *JASA*, 114(3), 1600-1610). This may be due to shared knowledge about the phonetics of the L1 and/or accented representations in the learner's mental lexicon. In the present paper we asked whether this same-accent benefit may in part be related to the speakers own accented productions. Since the most frequently heard speaker is likely oneself, we tested whether there is an intelligibility benefit for self-produced words that goes beyond the mere own-accent benefit. If such a benefit was found this could be one aspect to explain why it is so hard to overcome the circle of foreign accented production and accented word forms in the mental lexicon.

In a first session we recorded twenty-four female German learners of English reading a randomized list of English minimal word pairs at the end of short carrier sentences. Minimal pairs contained either the difficult word-final voicing contrast (stops and fricatives) or the vowel contrast / ε - $\text{\text{a}}$ /. Acoustic measures were used to group speakers according to their proficiency as determined by the produced difference between the words of the minimal pairs. Overall, the produced contrasts were much smaller and less consistent than in a control group of native speakers. A few weeks later, the same German participants returned for a perception experiment. Their task was to listen to the recorded words (in isolation) and decide which member of the minimal pair had been produced. For each contrast they heard their own productions as well as sets of unfamiliar voices that were matched in the produced difference for each type of contrast. Results showed that overall more proficient speakers/listeners were more accurate than less proficient speakers. However, across all proficiency levels and across all sound contrasts a significant effect of voice was found. Indeed participants understood words significantly better when they heard themselves than other speakers of the same proficiency. In order to control for differences in proficiency between groups of listeners, the subset of the most and least proficient participants was invited for a second perception experiment in which they repeated the task with stimuli from the opposite-proficiency group. Low-proficient listeners performed better at words produced by high than low-proficient speakers, but still performed worse than high-proficient listeners did with these words. The high-proficient listeners perceived words from the low-proficient group worse than their own and just as well as these perceived self-produced words. This indicates that accurate perception is supported most in either self-perception or by good production abilities. The intelligibility benefit for own voice presumably results from experience with personal strategies for producing difficult sound contrasts in an L2. For L2 learners this could mean that the improvement of their own accent is hindered by familiarity with their own speech.